



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/803,496	03/08/2001	Bert L. Francis	P2300	6057

24739 7590 04/27/2005

CENTRAL COAST PATENT AGENCY  
PO BOX 187  
AROMAS, CA 95004

EXAMINER
----------

TRAN, PABLO N

ART UNIT	PAPER NUMBER
----------	--------------

2685

DATE MAILED: 04/27/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>		<b>Applicant(s)</b>	
	09/803,496		FRANSIS, BERT L.	
	<b>Examiner</b>		<b>Art Unit</b>	
	Pablo N Tran		2685	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 20 October 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |                                                                                                                         |                                                                                         |
|-------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                             | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date: _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                    | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date: _____ | 6) <input type="checkbox"/> Other: _____                                                |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Mizumoto et al.* (6,393,299) in view of *Pascoe et al.* (4,245,355).

As per claims 1, 5-8, 12-15, and 19-21, *Mizumoto et al.* disclose a broadband TX/RX communication system having an antenna (fig. 1/no. 1, fig. 7/no. 1), a frequency converter apparatus (fig. 1/no. EX1, fig. 4/no. EX2, fig. 5/no. EX3, fig. 6/EX4) for RF signals coupled to the first number of signal bands by a first interface (see fig. 4, where it is clear that the multi input/output RF signals are to the left of the converter), modulation circuitry (fig. 1/no. 8 & 12, fig. 7/no. 8 & 12) coupled to the converter by a second interface (multi input/output RF signals are to the right of the converter) for receiving or transmitting each of the bands at a common intermediate frequency, wherein the converter comprises a plurality of circuit elements (fig. 4/no. 41-42, 161-162) coupled to the first interface for up-conversion or down-conversion of the signals to and from an IF and a second number of on-chip voltage-controlled oscillator (fig. 4/no. 191-192, 201-201, fig. 7/no. 18-19) coupled to the circuit elements through one of

Art Unit: 2685

frequency division circuitry for generating a local-oscillator signal to that circuit element for conversion between the IF frequency and the receive or transmit frequency for each band, and wherein the second number is less than the first number (It is clear that the number of VCO is less the numbers of frequency bands, see col. 5/ln. 44-col. 6/ln. 42). *Mizumoto et al.* do not specifically suggested that the converter is integrated on an IC. However, such is notoriously well known in the art, as suggest by *Pascoe et al.* (fig. 5A, col. 6ln. 14-16). Therefore, it would have been obvious to one of ordinary skill in the art to provide such IC frequency converter to the radio communication system of *Mizumoto et al.* in order to simplify the circuitry and thus facilitate fabrication but also reduce space and cost.

As per claims 2, 9 and 16, the modified radio communication system of *Mizumoto et al.* further disclose the on-chip VCO, through alternative sideband selection, providing the LO frequency to two or more of the RF frequency bands (see *Mizumoto et al.*, fig. 4/no. 191-192, fig. 7/no. 18-19, col. 5/ln. 44-col. 6/ln. 42).

As per claims 3-4, 10-11, and 17-18, the modified radio communication system of *Mizumoto et al.* disclose such frequency divider to the on-chip VCO, through alternative sideband selection, providing the LO frequency for conversion of the RF frequency bands but does not suggested a frequency doubling and/or a redoubling circuitry couple to the VCO. However, such frequency doubling circuitry is notoriously well known in the art that the examiner takes Official Notice of such. Therefore, it would have been obvious to one of ordinary skill in the art to provide such frequency doubling circuitry couple to the VCO to the modified radio communication system of *Mizumoto et*

*a/.* in order to provide such RF frequency-matching dependent upon the requirements of the radio telecommunication system.

### ***Conclusion***

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Auvray (5,953,641), Itoh et al. (5,859,570), and Itoh et al. (5,852,784) disclose radiotelephone communication system.

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Pablo Tran whose telephone number is (571)272-7898. The examiner normal hours are 9:30 -5:00 (Monday-Friday). If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Urban, can be reached at (571)272-7899.

**Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks  
Washington, D.C. 20231

**or faxed to:**

**(703) 872-9314 (for Technology Center 2600 only)**

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Application/Control Number: 09/803,496


Page 5

Art Unit: 2685

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

**PABLO N. TRAN**  
**PRIMARY EXAMINER**

April 19, 2005



Av2685